



केंद्रीय भूमि जल बोर्ड

जल संसाधन, नदी विकास और गंगा संरक्षण
विभाग, जल शक्ति मंत्रालय

भारत सरकार

Central Ground Water Board

Department of Water Resources, River
Development and Ganga Rejuvenation,
Ministry of Jal Shakti
Government of India

AQUIFER MAPPING AND MANAGEMENT OF GROUND WATER RESOURCES

**MEL PALLIPATTU FIRKA, TIRUVANNAMALAI
DISTRICT, TAMIL NADU**

दक्षिण पूर्वी तटीय क्षेत्र, चेन्नई

South Eastern Coastal Region, Chennai

Management Plan -Mel Pallipattu Firka, Tiruvannamalai District.

Area:	114.28 Sq.Km
Monsoon Rainfall :	849 mm
Stage of groundwater development :	148.24 %
Uncommitted surface runoff/flow :	14.55 MCM.
Total volume of Weathered zone available (Rechargeable) :	13.71 MCM. (8.00m thickness)
Total volume of weathered zone available (Rechargeable) :	8.57 MCM (considering 5 m thickness).
Area are suitable for recharge :	>90 % (As per integration studies)
Quantity Rechargeable:	5.57 MCM
Effect on Water Level:	3.47 m Rise
Cost Involved:	17.187 Crore

Management Plan -Mel Pallipattu Firka, Tiruvannamalai District.

Feasible Artificial Recharge & Water Conservation structures/ activities	Tentative Design	quantity (in nos. or area in sq. m)	Total volume (cu.m)	Tentative unit cost (in Rs lakh)	Total tentative cost (in Rs lakh)	Expected Annual GW recharge (cu.m)
Recharge Structures/ Activities						
Masonry Check dams (4 Fillings)	Crest- 10 -15 m; Height- 0.5 m to 1 m	10	300 (60%)	15.0	150	7200
Nala bunds / Gabion (4 Fillings)	Width: 5 to 15 m	15	150 (60%)	2.0	30	5400
Recharge shaft (ON ROAD SIDE)	(1.5 m dia. with bore well up to 17 m)	100	77.2(60%)	4.0	400	4632
Revival, repair of water bodies (3 fillings)	Shaft = 1.5 m dia x 2m h Recharge= area of the smaller tanks x 1.0 m	30	1200000* 1* 3 (60%)	28.0 (25+3)	750	3600000
Recharge shaft with the pond /tanks/canals (3 fillings)	Shaft = 3.0 m dia x 3m h Recharge=(20% of the total area of the big tanks)	10	400000* 1.0*3	5.0	120	1200000
Farm Pond (in ha) (4 filling)	(30 m x 30m x 1.5 m) 900 sq.m or 0.1 ha	100 unit	1350x4	1	100	540000
				Sub Total	1630	5357232
Water Conservation Activities						
Sprinkler/ drip/ HDPE pipes for 300 ha select area	For 1 ha with 5 m interval HDPE pipe	100 ha		0.6 /ha	60	300000
				Sub total	1690	
Impact assessment and O & M						
Piezometers Up to 50 m bgl – 12 nos. @ 0.6 lakh (Impact assessment to be carried out by the implementing agencies)					7.20	
O & M - 5 % of total cost of the scheme					81.50	
TOTAL					1718.70	

Tentative sites for proposed artificial recharge structures, Melpallipattu firka

S.NO	LONGITUDE	LATITUDE	TYPE OF ARS
1	78.70	12.22	NALA BUND
2	78.69	12.22	NALA BUND
3	78.65	12.20	NALA BUND
4	78.65	12.20	NALA BUND
5	78.70	12.16	NALA BUND
6	78.70	12.15	NALA BUND
7	78.69	12.14	NALA BUND
8	78.72	12.15	NALA BUND
9	78.74	12.18	NALA BUND
10	78.75	12.21	NALA BUND
11	78.75	12.26	NALA BUND
12	78.76	12.26	NALA BUND
13	78.74	12.29	NALA BUND
14	78.71	12.29	NALA BUND
15	78.72	12.20	NALA BUND
16	78.71	12.30	CHECK DAM
17	78.70	12.29	CHECK DAM
18	78.69	12.27	CHECK DAM
19	78.73	12.23	CHECK DAM
20	78.70	12.16	CHECK DAM
21	78.68	12.15	CHECK DAM
22	78.67	12.13	CHECK DAM
23	78.74	12.29	CHECK DAM
24	78.71	12.29	CHECK DAM
25	78.73	12.21	CHECK DAM
26	78.71	12.29	RR CUM RS
27	78.74	12.30	RR CUM RS
28	78.72	12.29	RR CUM RS
29	78.73	12.29	RR CUM RS
30	78.74	12.29	RR CUM RS
31	78.73	12.28	RR CUM RS
32	78.72	12.29	RR CUM RS
33	78.72	12.28	RR CUM RS
34	78.70	12.29	RR CUM RS
35	78.69	12.27	RR CUM RS
36	78.73	12.28	RR CUM RS
37	78.73	12.28	RR CUM RS
38	78.72	12.27	RR CUM RS
39	78.73	12.27	RR CUM RS

S.NO	LONGITUDE	LATITUDE	TYPE OF ARS
40	78.74	12.28	RR CUM RS
41	78.74	12.27	RR CUM RS
42	78.75	12.28	RR CUM RS
43	78.75	12.28	RR CUM RS
44	78.76	12.28	RR CUM RS
45	78.76	12.25	RR CUM RS
46	78.74	12.24	RR CUM RS
47	78.74	12.21	RR CUM RS
48	78.73	12.17	RR CUM RS
49	78.72	12.17	RR CUM RS
50	78.69	12.15	RR CUM RS
51	78.69	12.16	RR CUM RS
52	78.69	12.17	RR CUM RS
53	78.72	12.16	RR CUM RS
54	78.68	12.14	RR CUM RS
55	78.66	12.16	RR CUM RS
56	78.70	12.21	RR CUM RS
57	78.79	12.28	RS
58	78.80	12.28	RS
59	78.78	12.28	RS
60	78.77	12.28	RS
61	78.76	12.29	RS
62	78.75	12.25	RS
63	78.73	12.29	RS
64	78.76	12.25	RS
65	78.71	12.21	RS
66	78.71	12.20	RS

PROPOSED ARTIFICIAL RECHARGE STRUCTURES
MELPALLIPATTU FIRKA, TIRUVANNAMALAI DISTRICT

